

AMENDMENTS TO THE CLAIMS

The listing of the claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (original): A micro acoustic spectrum analyzer for determining the frequency components of a fluctuating sound signal, comprising:

at a microphone to pick up the fluctuating sound signal and produce an alternating current electrical signal;

at least one microfabricated resonator, each resonator having a different resonant frequency, that vibrates in response to the alternating current electrical signal; and

at least one detector to detect the vibration of the at least one microfabricated resonator.

Claim 2 (original): The micro acoustic spectrum analyzer of Claim 1, further comprising a mixer to mix a reference signal with the alternating current electrical signal from the microphone to shift the frequency spectrum of the alternating current electrical signal to a frequency range that is a better matched to the resonant frequencies of the at least one microfabricated resonator.

Claim 3 (original): The micro acoustic spectrum analyzer of Claim 1, further comprising means for storing and scanning the detected vibrations from each of the at least one detector.

Claim 4 (original): The micro acoustic spectrum analyzer of Claim 1, further comprising a pattern recognition processor to compare the detected vibrations from the at least one detector to a library of profiles.

Claim 5 (original): The micro acoustic spectrum analyzer of Claim 1, wherein the microphone comprises a hydrophone.

Claim 6 (original): The micro acoustic spectrum analyzer of Claim 1, wherein the at least one microfabricated resonator comprises silicon-based materials.

Claim 7 (original): The micro acoustic spectrum analyzer of Claim 1, wherein the resonant frequency of the at least one microfabricated resonator is greater than 20 kHz.

Claim 8 (not entered)

Claim 9 (not entered)

Claim 10 (original): The micro acoustic spectrum analyzer of Claim 1, wherein the at least one microfabricated resonator comprises an electromagnetic resonator.

Claim 11 (currently amended): The micro acoustic spectrum analyzer of Claim 10, wherein the electromagnetic resonator comprises a flexural plate wave resonator.

Claim 12 (currently amended): The micro acoustic spectrum analyzer of Claim 10, wherein the electromagnetic resonator comprises a teeter-totter resonator.

Claim 13 (currently amended): The micro acoustic spectrum analyzer of Claim 10, wherein the electromagnetic resonator comprises a xylophone resonator.

Claim 14 (original): The micro acoustic spectrum analyzer of Claim 1, wherein the at least one microfabricated resonator comprises a tunable resonator having a resonant frequency and a bandwidth that can be adjusted electrically.

Claim 15 (currently amended): The micro acoustic spectrum analyzer of Claim 14, wherein the electrical adjustment comprises a capacitor-based circuit.

Claim 16 (original): The micro acoustic spectrum analyzer of Claim 1, wherein the at least one detector is selected from the group consisting of a current-viewing resistor, capacitance means, and optical means.